

Claims

- [1] A high power lithium unit cell, comprising:
at least one rectangular anode plate having an anode collector, at least one surface of the anode collector being coated with an active material of anode;
at least one rectangular cathode plate having a cathode collector, at least one surface of the cathode collector being coated with an active material of cathode;
at least one separation film inserted between the rectangular anode plate and the rectangular cathode plate, and providing electric insulation;
an anode terminal connected to an anode plate connecting part which protrudes from either of two long sides of four sides of the rectangular anode plate; and
a cathode terminal connected to a cathode plate connecting part which protrudes from either of two long sides of four sides of the rectangular cathode plate.
- [2] The high power lithium unit cell according to claim 1, wherein the anode terminal and the cathode terminal protrude in opposite directions.
- [3] The high power lithium unit cell according to claim 2, wherein the anode terminal has a width corresponding to about 1/5 to 1 of a length of the long side of the anode plate, and the cathode terminal has a width corresponding to about 1/5 to 1 of a length of the long side of the cathode plate.
- [4] The high power lithium unit cell according to claim 1, wherein the anode terminal and the cathode terminal protrude in the same direction.
- [5] The high power lithium unit cell according to claim 4, wherein the anode terminal has a width corresponding to about 1/8 to 1/2 of a length of the long side of the anode plate, and the cathode terminal has a width corresponding to about 1/8 to 1/2 of a length of the long side of the cathode plate.
- [6] The high power lithium unit cell according to claim 1, wherein the anode plate connecting part and the cathode plate connecting part are connected to the anode terminal and the cathode terminal, respectively, through welding.
- [7] The high power lithium unit cell according to claim 1, wherein the anode plate connecting part and the cathode plate connecting part are coated with a highly conductive material and compressed against the anode terminal and the cathode terminal so as to be connected to the anode terminal and the cathode terminal, respectively.
- [8] The high power lithium unit cell according to claim 1, wherein the anode plate connecting part and the cathode plate connecting part are connected to the anode terminal and the cathode terminal, respectively, using an adhesive containing a highly conductive material.
- [9] A high power lithium battery pack, comprising:

at least one high power lithium unit cell, comprising:
at least one rectangular anode plate, separation film, and rectangular cathode plate sequentially laminated;
an anode terminal extending outwards from either of two long sides of four sides of the rectangular anode plate; and
a cathode terminal extending outwards from either of two long sides of four sides of the rectangular cathode plate;
at least two gaskets laminated on both surfaces of the high power lithium unit cell; and
a pair of support plates laminated on the outermost gaskets at least.

- [10] The high power lithium battery pack according to claim 9, wherein each of the support plates is made of a conductive material for heat emission.
- [11] The high power lithium battery pack according to claim 9, wherein air flows through space defined between the anode terminal, the cathode terminal, and the support plates, thus maintaining temperature of the high power lithium unit cell.
- [12] The high power lithium battery pack according to claim 11, wherein the high power lithium unit cell maintains a temperature range of -20°C to 50°C.
- [13] The high power lithium battery pack according to claim 11, wherein the high power lithium unit cell maintains a temperature range of 0°C to 40°C.